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June 19, 2007

Secretary, U.S. Nuclear Regulatory Commission
Washington, DC 20055-001
ATTN: Rulemakings and Adjudications Staff

Subject: **10 CFR 50.55a Proposed Rulemaking Comments-RIN 3150-AH76**

Dear Sir or Madam,

This letter provides Southern California Edison's (SCE's) comments on the subject proposed rulemaking. SCE is the operator of the San Onofre Nuclear Generating Station (SONGS), and offers these comments based on its experience in performing reactor vessel head examinations at both SONGS Units 2 and 3 during several refueling outages. In addition to these comments, SCE endorses the Nuclear Energy Institute's (NEI) comments on this Rulemaking submitted June 19, 2007.

Comments on Proposed Change Adding Paragraph 10CFR50.55a(g)(6)(ii)(D), Implementation of American Society of Mechanical Engineers (ASME) Code Case N-729-1 with Conditions

1) General Comments on Addition of Paragraph 50.55 a (g) (6) (ii) (D) (1)

This change would replace the First Revised NRC Order EA-03-009 (Order), issued on February 20, 2004, requiring periodic reactor vessel head inspections with a modified version of the ASME Code Case N-729-1. SCE endorses the proposed transition from the First Revised NRC Order EA-03-009 to ASME Code Case N-729-1. However several of the conditions added to Code Case N-729-1 under paragraphs 50.55 a (g) (6) (ii) (D) (2) through (6) are overly prescriptive, and therefore would impose significant hardship without commensurate benefit to public health or safety. Specific comments on these conditions are described in the following subsections. SCE recommends that the Proposed Rule, as written, be revised.

a) Comments on proposed addition of paragraph 50.55 a (g) (6) (ii) (D) (2)

This proposed condition to Code Case N-729-1 would decrease the maximum interval between penetration nozzle and J-weld inspection frequency for Primary Water Stress Corrosion Cracking (PWSCC) resistant heads from at least once every 10 years, to at least once every 7 years. This would be more frequent than the maximum allowable interval of 8 years for PWSCC susceptible heads. Under Code Case N-729-1 the proposed 10-year inspection frequency for a PWSCC resistant head at San Onofre Nuclear Generating Station, Units 2 and 3 (SONGS) is supported by research data which shows significantly greater improvement in PWSCC resistance from the new

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alloys. The proposed incremental conservatism associated with a maximum interval of 7 would increase inspection costs and worker radiation dose by approximately 40% without providing a commensurate increase in public safety. SCE recommends that the condition imposed by paragraph (D) (2) be deleted.

b) Comments on proposed addition of paragraph 50.55 a (g) (6) (ii) (D) (3)

The proposed modification to ASME Code Case N-729-1 described under this paragraph eliminates note 6 to Table 1 of the Code Case. Note 6 of the Code Case defines the minimum penetration surface and volumetric examination coverage requirement to be 95%, and allows exemption from J-weld surface examinations when penetration volumetric examinations are performed at an increased frequency. The proposed condition replaces these items with a requirement to inspect 100% of the specified volumes and surfaces, and to perform a 100% inspection of J-weld surfaces during each required inspection.

SCE has the following specific concerns:

b(1) - Elimination of Note 6

The impact on note 9 from proposed elimination of note 6 is not addressed. Reinspection Years (RYI) should become 3.0 when penetrations are examined volumetrically and 2.25 when penetrations are surface examined.

b(2) - 95% versus 100% Coverage

Relaxation of coverage requirements has been necessary under the current Order, and will continue to be necessary upon codification of the Proposed Rule. It has been possible for SONGS to inspect 100% of the relaxed inspection requirements. This is anticipated to continue when the reactor vessel heads are replaced. SCE has encountered occasions where a small portion of an individual penetration becomes very difficult to examine due to transducer coupling, etc. These instances have resulted in significant extension to the inspection duration, with an insignificant incremental increase in the inspection base. In such cases, especially when inspecting a PWSCC resistant head, up to a 5% coverage reduction is reasonable. SCE recommends that the NRC reconsider, or modify the Proposed Rule accordingly.

b(3) - J-weld Inspection Requirements

Safety significant PWSCC in reactor vessel head penetrations could occur if circumferential cracks develop in the penetration tubes or boric acid leakage degrades structural integrity of the reactor vessel head. Code Case N-729-1 and NRC Order EA-03-009, Revision 1 require a combination of bare metal visual examination of the external head surface in combination with either a volumetric examination of the nozzles, or a complete wetted surface examination of PWSCC susceptible penetration materials. NRC Order EA-03-009 also requires an evaluation for evidence of a leakage path when volumetric examination methods are used.

ASME Code Case N-729-1 provides a level of safety that is equivalent to NRC Order EA-03-009. The significant difference between the ASME Code Case and EA-03-009 in this respect is that the Code Case does not require a leak path evaluation when the volumetric option is implemented. This is technically equivalent to EA-03-009 because bare metal visual examination of the reactor head surface dominates the detection probability of base metal wastage. The addition of a leak path assessment provides only a minimal increase in detection probability beyond direct visual examination of the head surface. Leak path evaluation will likely remain an inspection practice under the Proposed Rule at SONGS, but it is not considered to be a significant inspection element with regards to ensuring safety.

The NRC condition described in paragraph 50.55 a (g) (6) (ii) (D) (3) includes a new requirement to inspect 100% of the J-weld surface when volumetric inspection techniques are employed. This incremental examination will provide the earliest possible detection of PWSCC initiation within the weld material. Early detection will reduce the average duration that PWSCC might be present in J-welds. However, PWSCC that is confined to the J-weld volume does not present any structural risk since ample weld material will remain to preclude nozzle separation from the head.

Surface examination of J-welds also reduces the probability of coolant leakage from through weld cracking during the subsequent operating cycle. However, multiple operating cycles with through wall leakage are required before structurally significant wastage of vessel head material would occur. Therefore, bare metal visual examination of vessel head surfaces during each refueling outage for PWSCC susceptible heads provides an equivalent level of safety to 100% J-weld surface examinations.

The addition of J-weld surface examination to the minimum required inspection scope is expected to add approximately 5 days to the existing inspection program. In addition, radiological dose to inspection workers is expected to increase by 5 to 10 Roentgen Equivalent Man (REM) per inspection. The radiological dose impact is dependent on the extent of manual dye penetrant examination that will be necessary to achieve coverage requirements. At a minimum, manual dye penetrant examination of 10 In Core Instrumentation (ICI) head penetrations of each SONGS unit would be required under the Proposed Rule. SCE considers the small incremental improvement associated with this condition to be unwarranted on a safety significance basis. Therefore, SCE recommends that the requirement to perform J-weld surface examinations be deleted when volumetric methods are used.

c) Comments on proposed addition of paragraph 50.55 a (g) (6) (ii) (D) (4) (i) through (iv)

Nondestructive Examination (NDE) techniques currently in place in support of NRC Order EA-09-003 have demonstrated success in detecting PWSCC and preventing Reactor Vessel Head penetration leakage. The qualification practices supporting these examination techniques are best characterized as low to intermediate rigor, as defined in ASME Section V, Article 14, "Examination System Qualification". Inclusion of additional

requirements outlined in proposed paragraphs 50.55 a (g) (6) (ii) (D) (4) (i) through (iv) will substantially complicate inspection qualification processes with minimal or no performance benefit.

The proposed changes will adversely and unnecessarily affect qualified NDE resources, and unnecessarily limit flexibility to adapt examination techniques to emergent situations. SCE recommends that the proposed addition of paragraphs (g) (6) (ii) (D) (4) (i) through (iv) be deleted, and that either the original N-729-1 Code Case qualification requirements be preserved, or modified to the "intermediate rigor" requirements of Article-14 Section V of the ASME Code.

d) Comments on proposed addition of paragraph 50.55 a (g) (6) (ii) (D) (5)

Note 8 in Table 1 in Code Case N-729-1 requires that after unacceptable flaws (of any type) have been identified, the inspection of nozzles and J-welds shall be performed at least every other refueling outage. The condition imposed by the NRC under paragraph 50.55 a (g) (6) (ii) (D) (5) would further require that following detection of PWSCC flaws, penetration and J-weld inspections shall be performed during every subsequent refueling outage. SCE agrees that an increased inspection frequency may be appropriate following detection of unacceptable flaws. In general, SCE agrees with the requirements of the proposed paragraph and additional NRC conditions related to PWSCC flaws.

However, depending on the flaw type, head materials and operating conditions, longer reinspection frequencies may be justified. Since the impact of unnecessary nozzle and J-weld inspections is substantial, it will often be appropriate for plant operators to propose less frequent inspection plans. In such cases, a request for an extension to the reinspection intervals based on case specific details can be addressed through Code Relief. SCE recommends that this paragraph explicitly acknowledge that plant specific conditions are likely to justify formal relief requests.

e) Comments on proposed addition of paragraph 50.55 a (g) (6) (ii) (D) (6)

N-729-1 allows for modification to the required inspection coverage of Figure 2 by use of the methodology defined in Appendix I. This proposed paragraph requires separate NRC approval of Appendix I evaluations prior to reduction of coverage requirements. Appendix I includes sufficient detail to produce adequate and consistent adjustments to the inspection coverage specified in Figure 2 of the Code Case. SCE disagrees with this proposed paragraph that requires separate NRC approval of Appendix I evaluations.

Physical geometry of the SONGS 2 and 3 heads preclude examination of head penetration volumes and areas specified in the existing Order, as well as the ASME Code Case. The NRC has previously reviewed and approved Relaxation from Order EA-03-009 requirements. SCE recommends that the specific previously approved Relaxation Requests for reduced coverage requirements remain valid.

General Comment on Implementation Schedule

If the rule is implemented without changes, immediate compliance would not be possible. The Final Rule must allow for a reasonable implementation period.

Backfit Evaluation (item #8 p16739)

The conditions imposed on Code Case N-729-1 under paragraphs 50.55 a (g) (6) (ii) (D) (3) & (4) constitute an increase in the inspection requirements compared to NRC Order EA-03-009.

Should you have any questions please contact Ms. Linda T. Conklin at (949) 368-9443.

Sincerely,

D.F. Pilmer

for A.E. Scherer